Development of Guidance on Updating Output Allowance System
Issue List Prepared by EPA
For December 17, 1998 Organizational Workgroup Conference Call

Development of Guidance on Updating Output Allowance System

Objective: Identify and resolve issues associated with the measurement of electricity- or steam-related output data in order to design an allowance system which periodically updates allocations based on output data.

Submittals: EPA is requesting specific proposals and information on how to measure and report output at the plant level, focusing on the data issues identified below.

Criteria: Proposals must satisfy the following criteria: (1) be suitable for equitable application on a variety of power plant configurations, (2) permit continuous measurement and periodic reporting of parameters related to stack NO_x emissions and output, and (3) allow updating allowances regularly or automatically while minimizing use of government resources.

Data Issues

1. What are sources of information that States need in order to determine and update allocations on a periodic basis?

Electrical Generation:

- Where do plants measure electricity? (e.g., gross MWe measured at generator, net MWe determined at plant level from other measurements)
- What supporting records are needed for MWe (e.g., quality assurance test results on megawatt meters)?

- What are the advantages and disadvantages of measuring net MWe?
- What are the advantages and disadvantages of measuring gross MWe?
- Should power output be measured as gross generation at the generator or net generation after plant power requirements have been consumed?

- Does gross generation fail to account for a plant's power requirements whose efficiency could be improved?
- Can net generation be measured at the point of sale?
- Can all electric generating plants measure net generation at the same general location and with the same method?

- How can EPA allocate based on generation measured at the plant level or the generator or turbine level, when EPA's allowance tracking system tracks at the unit (boiler or turbine) level and EPA's emission tracking system tracks emissions and heat input at the unit and stack levels?

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Steam (Thermal) Output:

- How is steam output measured? With what equipment? In what units?
- Where is steam output measured?
- What supporting records are needed for mmBtu steam output (e.g., steam temperature, steam pressure, steam flowrate (klb/hr), quality assurance test results on meters/transmitters)?

Mechanical Output:

- Is mechanical output going to be a form of output by either industrial or electrical generating units?
- If mechanical output is used, how is mechanical output measured? What are units of measurement (J, Ft-lb)? What are appropriate parameters to measure, and at which locations?
- What additional supporting records are needed for mechanical output (e.g., quality assurance test)?

2. Equipment sources use to measure output

- Is standard equipment available to measure power output?
- Does the measurement equipment vary based upon the source of energy? (e.g., is electricity measured the same way in a hydroelectric plant and a coal-fired unit?)
- Does the measurement equipment vary based upon the unit type or the generator/turbine type?

- What standard methods exist for ensuring the accuracy of output monitoring equipment (e.g., ASME or IEEE standards)?
- Do sources typically use those accuracy standards?
- What is the typical error found in output measurements? Is the error different for steam and for electricity?

3. Comparing and converting heat input, steam output, and electrical output

- Should steam output be converted to electrical output? If so, which method should be used to convert steam energy to electrical power equivalent? If steam energy were not converted, how could emission limitations be treated for cogenerators?
- What assumptions should be made about the efficiency of conversion from steam output to electrical output?
- If output data were not available directly, what would be appropriate assumptions to make about the efficiency of conversion from heat input to output?

4. How do States receive output data for setting future allocations ?

- If allocations were to be based upon electrical generation only, can a State use EIA form 759 for whichever ozone seasons a state selects?
- If allocations were to be based upon steam, mechanical and electrical generation, how will a state and/or EPA obtain steam or mechanical output data directly from sources?
- If a State decides to regulate process sources under its SIP, how will the State determine whether it is easier to find or measure input or output data?